

Serial No. 10/023,184
Docket No. 21398-PA-DIV

REMARKS

The rejections set forth by the Examiner in the Official Action of August 4, 2003 will be addressed in order.

Rejection under 35 USC § 112

Claim 2 has been rejected in error. Claims 1-5 were cancelled by preliminary amendment.

Background of Invention

At the outset, it would be well to explain the method by which applicant's invention operates. In the specification, pages 4-6, the invention is said to operate as follows:

In the normal combustion of coal, fly ash particles are produced. These fly ash particles contaminated with carbon are entrained in an air stream that flows through an exhaust pipe. The mixture of ash/carbon has a net negative charge. As part of the improvement of the herein disclosed invention, metal plates, electrically insulated from the pipe are inserted into the exhaust pipe. These plates are provided with sharp metal spikes attached thereto. As the negatively charged ash particles strike the plate, they impart a charge to the surface of the plate. In time, sufficient charge will accumulate on the plate to produce a substantial electric field around the plate. The electric field will be intensified at the tips of the sharp spikes, and when the charge on the plate is high enough, a corona discharge will begin at the tips of the spikes. The corona discharge will produce ozone.

Rejection under 35 USC § 103

Claims 6 and 8-13 are rejected under 35 USC § 103 as being unpatentable over *Ikeda et al*, and claims 6-13 stand rejected over *Ikeda et al* in view of *Beckmann et al*.

Applicant Responds

Claims 6 and 8-13, as originally presented require the structural features of

- 1) at least one metallic sharp-tipped component,
- 2) mounted on a metallic surface, and

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3) which is in turn mounted on an insulator.

This relationship of components is not shown by *Ikeda et al.*

In addition, the claims have now been amended to mount the sharp-tipped component within a negatively charged fly ash stream to produce ozone. This feature is clearly not shown by *Ikeda et al.*

Applicant further points out that contrary to applicant's invention, the *Ikeda et al* device requires a high voltage generator (4) to apply high voltage between the metallic needle electrode 2 and the metallic grid-like electrode 3 so as to generate corona discharge (col. 1, line 15, etc.). Thus, it is clear that applicant's device is structurally distinct from *Ikeda* in that applicant's device requires no external high voltage device to produce high voltage. Clearly the rejection over *Ikeda et al* should be withdrawn.

Claims 6-13 are rejected under 35 U.S.C. § 103 over *Ikeda et al* (5,445,798) in view of *Beckmann et al* (4,559,467). The deficiency of *Ikeda et al* has been discussed above. *Beckmann et al* is equally deficient in requiring the attachment to a high-voltage source.

Further note that applicant has further distanced the claims from the prior art by specifying that the spiked device is in a fly ash stream. This concept is clearly not shown by the prior art. The rejection over *Ikeda et al* in view of *Beckmann et al* should be withdrawn.

Applicant's invention besides having the unobvious features as set forth above is also distinct in the following features which were not shown by the prior art references.

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1. The prior art does not show a metallic cylindrical surface with metal-tipped components surrounding the metallic cylindrical surface (claim 7).

2. The baffle of claim 9 is not shown by the references applied.

3. The prior art does not show metal spikes on a metal plate. The structure of metal spikes on a metal plate facilitates easy and discretionary placement of the spikes within the fly ash stream.

The reference showing the state of the art has been noted.

It appears that all matters have been addressed, and that the case is now in condition for allowance; and the same is respectfully requested.

Respectfully submitted,

October 1, 2003
Date

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